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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/09/2003

Laurent Dumortier

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11/12/2008

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EXAMINER

GUIDOTTI, LAURA COLE

ART UNIT

PAPER NUMBER

3727

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/681,101	<b>Applicant(s)</b> DUMORTIER ET AL.	
	<b>Examiner</b> Laura C. Guidotti	<b>Art Unit</b> 3727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3 and 6-23 is/are pending in the application.
- 4a) Of the above claim(s) 14, 19 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 6-13, 15-18, 20, 21 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08 August 2008 has been entered.

### ***Election/Restrictions***

2. Amended claims 14, 19, and 22 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 14, 19, and 22 are drawn to a method of using a device for removing aircraft mastic, wherein the original claims are drawn to a device for removing mastic. The method of using the device can be accomplished by a materially different product, such as a device not including a mastic removal tool connected to a vibratory part, a mandrel, motor, or shaft. Alternatively, the device can be used in other methods such as removing generic types of mastic from surfaces, removing other types of solid debris from surfaces, or for removing mastic from other surfaces of aircraft than just an interior wing surface.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14, 19, and 22 are withdrawn from

consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 13, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., US 5,353,465 in view of Hoffman, US 4,466,851 and JP 05-321189 (see English translation of Abstract and Detailed Description).

Pierce et al. disclose the claimed invention including a device comprising a vibratory part with a pneumatic motor (Column 3 Lines 1-3) for causing vibratory alternating movement (continuous spurts of compressed air and drive shaft 16; Column 3 Line 55 to Column 4 Line 7), a mastic removal tool connected to the vibratory part

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(50), the distal end having a contact portion (see Figures), and has an inherent hardness (claim 13). Regarding claim 21, the head inherently has a “hardness”, and the vibratory means and tool are “sized” to be capable of being carried, the vibratory means having a connection for a source of compressed air (Column 3 Lines 18-22). Pierce et al. also does not disclose that the vibratory alternating movement is at a frequency of about 120 Hz. Pierce et al. does not disclose that the head is made of a non-abrasive material selected from polyetheretherketones, polyoxymethylenes, polyetherimides, or epoxy resins.

Hoffman teaches a similar pneumatic scraping tool to that of Pierce et al. for scraping adherent material from a work surface (Column 5 Lines 48-49) and operates at a frequency of about 120 Hz (4800 strokes per minute which converts to 80 Hz, Column 4 Lines 44-47). Hoffman recognizes that frequency may be varied by varying the amount of pressure in the pneumatic supply, so it is capable of operating at a frequency of 120 Hz (Column 4 Lines 55-64).

JP 05-321189 teaches a doctor blade that is made of polyetheretherketone (PEEK) loaded with 30% glass fibers or carbon (graphite) fibers (see English translation of Abstract) because the material can be used for scraping a surface without damaging the surface that is scraping and additionally has improved resistance to wear (see English translation of Abstract).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the pneumatic motor of Pierce et al. to create vibratory alternating movement at a frequency of 120 Hz, as Hoffman teaches, so that the tool operates at

an appropriate frequency for scraping an adherent material from a surface and further it would have been obvious to modify the contact portion of the mastic removal tool of Pierce et al. to be made of polyetheretherketone (PEEK) that may be loaded with 30% glass fibers, as JP 05-321189 teaches, in order to provide a beneficial scraping material that is capable of not damaging the surface that it is scraping and has improved resistance to wear.

4. Claims 6-8, 11-12, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., US 5,353,465 in view of JP 05-321189 (see English translation of Abstract and Detailed Description).

Pierce et al. disclose the claimed invention including a vibratory tool providing vibratory alternating movement at a vibratory frequency (continuous spurts of compressed air and drive shaft 16; Column 3 Line 55 to Column 4 Line 7), the vibratory tool comprising a body (or housing as it is housed in the operating rod, 12, 15) including a pneumatic motor (Column 3 Lines 1-3) and a mandrel (17), a mastic removal tool (50) comprising a head (54) and shaft mounted in the mandrel (16 or 57; Figure 2), a contact portion having a distal end having an inherent hardness (see Figures). Regarding claims 8 and 11-12, the head is beveled (at 54, see Figure 2) at an angle of approximately between or at 30 or 45 or 60 degrees (as shown in Figure 2; capable of being sharpened to any desired degree, Column 3 Line 46). Pierce et al. does not disclose that the head is made of a non-abrasive material selected from polyetheretherketones, polyoxymethylenes, polyetherimides, or epoxy resins.

JP 05-321189 teaches a doctor blade that is made of polyetheretherketone (PEEK) loaded with 30% glass fibers or carbon (graphite) fibers (see English translation of Abstract) because the material can be used for scraping a surface without damaging the surface that is scraping and additionally has improved resistance to wear (see English translation of Abstract).

It would have been obvious for one of ordinary skill in the art to modify the scraping blade of Pierce et al. to be made of polyetheretherketone (PEEK) that may be loaded with 30% glass fibers, as JP 05-321189 teaches, in order to provide a beneficial scraping material that is capable of not damaging the surface that it is scraping and has improved resistance to wear.

5. Claims 3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., US 5,353,465 and JP 05-321189 (see English translation of Abstract and Detailed Description) as applied to claim 23, in view of Hoffman, US 4,466,851.

Pierce et al. and JP 05-321189 disclose all elements previously mentioned above, however do not disclose that the vibratory alternating movement is at a frequency of about 120 Hz.

Hoffman teaches a similar pneumatic scraping tool to that of Pierce et al. for scraping adherent material from a work surface (Column 5 Lines 48-49) and operates at a frequency of about 120 Hz (4800 strokes per minute which converts to 80 Hz, Column 4 Lines 44-47). Hoffman recognizes that frequency may be varied by varying the amount of pressure in the pneumatic supply, so it is capable of operating at a frequency of 120 Hz (Column 4 Lines 55-64).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the pneumatic motor of Pierce et al. and JP 05-321189 to create vibratory alternating movement at a frequency of 120 Hz, as Hoffman teaches, so that the tool operates at an appropriate frequency for scraping an adherent material from a surface.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., US 5,353,465 and JP 05-321189 (see English translation of Abstract and Detailed Description) as applied to claim 23, in view of Sandt et al., US 4,137,588.

Pierce et al. and JP 05-321189 disclose all elements above. Pierce et al. further includes flexible tubing (24) and a housing (22), however does not include a container with a stock of tools.

Sandt et al. disclose the claimed invention including a tool comprising means for causing vibratory alternating movement (gear train driven by a motor, causes vibratory movement in an oscillatory manner, Column 4 Lines 6-41) and a tool secured to means (any one of the tools as shown in Figures 5-10). The means that cause the vibratory movement comprise a body (6) including a motor (14) and a mandrel (19 or 20) adapted to receive the tool (via tongues 21 or pins 27; Column 3 Lines 27-31). The device has numerous tools that comprise shafts (33) and there is a container (1) to store interchangeable tools (Column 2 Lines 44-47).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the device of Pierce et al. and JP 05-321189 to further include a



container with a stock of tools, as Sandt et al. teach, so that the device of Pierce JP 05-321189 is conveniently stored and replacement tools are stored there as well.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., USPN 5,353,465, JP 05-321189 (see English translation of Abstract and Detailed Description), and Sandt et al., US 4,137,588 as applied to claim 9, in view of Topiarz, DE 19949071 (see also English translation of Abstract).

Pierce et al., JP 05-321189, and Sandt et al. disclose all elements above. Topiarz teaches a vibratory scraping device having a suction system with a venturi connected to an air source (14).

It would have been obvious for the system in a container of Pierce et al., JP 05-321189, and Sandt et al. to further include a suction system having a venturi, as Topiarz teaches, so that excess debris or particulate is removed.

9. Claims 8, 11-12, 15, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., US 5,353,465 in view of Bachmann, US 3,848,289.

Pierce et al. discloses all elements mentioned above, however does not disclose that the head is made of a non-abrasive material selected from polyetheretherketones, polyoxymethylenes, polyetherimides, or epoxy resins.

Bachmann teaches that it is well known for scraper blades to be made from DELRIN (trade name of polyoxymethylene) because of its rigidity, abrasion resistance, and resistance over a range of temperatures (Column 1 Line 65 to Column 2 Line 23).

It would have been obvious for one of ordinary skill in the art to modify the head or scraping blade of Pierce et al. to be made of polyoxymethylene, in order to provide a beneficial scraping material that has a strength and rigidity for industrial scraping uses.

10. Claims 8, 11-12, 16, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., US 5,353,465 in view of Morse, US 4,967,437.

Pierce et al. discloses all elements mentioned above, however does not disclose that the head is made of a non-abrasive material selected from polyetheretherketones, polyoxymethylenes, polyetherimides, or epoxy resins.

Morse teaches that the plastic polyetherimide is chosen as a manufacturing material sometimes because it is a durable plastic that is stable in a wide temperature range (Column 5 Lines 22-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to manufacture the head or scraping blade of pierce from polyetherimide as Morse teaches the benefits of that plastic to be both durable and stable in a wide temperature range, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. In re Leshin, USPQ 416.

11. Claims 8, 11-12, 17, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., US 5,353,465 in view of Lane, US 5,924,204.

Pierce et al. discloses all elements mentioned above, however does not disclose that the head is made of a non-abrasive material selected from polyetheretherketones, polyoxymethylenes, polyetherimides, or epoxy resins.

Lane teaches a scraper in which the blade is made of epoxy resins because it is a hard and durable material having a hardness capable of cutting off chips but not too hard so as to give rise to scratches (Column 4 Lines 61-64; Column 5 Line 66 to Column 6 Line 5, Column 6 Lines 15-22 and Lines 44-49).

It would have been obvious for one of ordinary skill in the art to modify the head or scraping blade of Pierce et al. to be made of epoxy resins, as Lane teaches, in order to provide a hard and durable non-metal blade that is durable and hard.

### ***Response to Arguments***

12. Applicant's arguments filed 08 August 2008 have been fully considered but they are not persuasive.

The Examiner recognizes the importance of the hardness of the mastic described by the Applicant and the Applicant's stated problem of the removal process of this mastic from aircraft tanks/wings. However, the claims are drawn to the tool contact portion to have "a hardness sufficient...to remove polymerized, aircraft-fuel resistant aircraft mastic from interior surfaces of an aircraft wing and resist wear, but not too hard so as to give rise to scratches of the surfaces under the effect of the vibratory alternating movement." This "sufficient hardness" is nearly impossible to quantify, as the hardness of the mastic may vary industry-wide and the hardness the surface resisting scratches is equally impossible to quantify. No values of hardness were given for the mastic or contact portion. However, the Applicant has claimed with one of a selection of tool materials comprising the contact portion of the tool that the tool would be of this "sufficient hardness". This material has been given patentable weight, and

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the prior art mentioned above (notably JP 05-321189, Hoffman, Bachmann, Morse, and Lane) teaches that these materials have been used as contact tool blades for scraping or teach that these materials are beneficial for use in industry for various advantages. It is the teachings of these particular materials as having durability, strength, rigidity, stability that makes them advantageous for use as the material of the contact head of Pierce et al., and not necessarily the way in which these references use their materials.

Again, the Examiner reminds the Applicant that the claimed invention is “a device” and furthermore as recited in MPEP 2114, “While features of an apparatus may be recited either structurally or functionally, *claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function*. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)”. In combination, the prior art stated above includes all structural limitations recited in the claims.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C. Guidotti whose telephone number is (571) 272-1272. The examiner can normally be reached on Monday-Thursday, 7:30am - 5pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura C Guidotti/  
Primary Examiner, Art Unit 3727

lcg